THE LIFE HISTORY OF *OCYBADISTES KNIGHTORUM* LAMBKIN & DONALDSON (LEPIDOPTERA: HESPERIIDAE)

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Abstract

The early stages of *Ocybadistes knightorum* from north-eastern New South Wales are described and illustrated. Adults fly in close proximity to the larval food plant, a distinctive low hummock grass that grows within the shaded woodlands of estuarine biomes.

Introduction

Ocybadistes knightorum Lambkin and Donaldson (1994) is known only from the type locality, a swampy, mixed woodland near Boambee Creek, northern New South Wales. Females have been observed flying around and ovipositing on a spreading, low grass that superficially resembles a couch-grass (R. Mayo, pers. comm.). My own observations in the autumn and spring of 1994 confirm that this grass is the sole, or at least the principal larval foodplant in this area. Adults were reared in Newcastle from eggs laid by caged females on this grass. Details of the life history were recorded and found to be somewhat atypical for Australian Hesperiinae. Flowering material has not been obtained from the foodplant in spite of potting several plants for more than two years. A more thorough search at the type locality for fertile specimens of this grass is needed for confirmation of its identity in order to ensure the conservation of this local skipper.

Life history

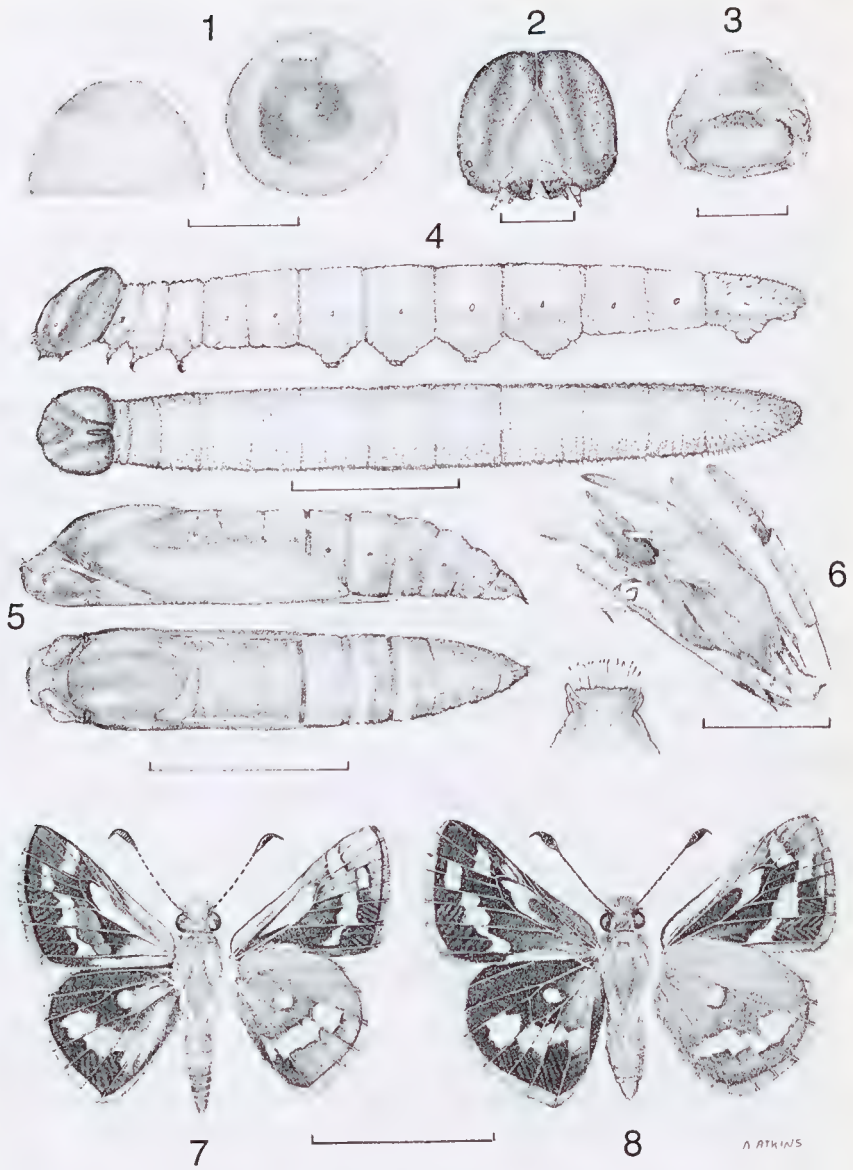
Foodplant. Believed to be *Hemarthria uncinata* (Gramineae) (T.A. Lambkin, pers. comm.).

Egg (Fig. 1). White to pale cream, turning after 30-40 hours to cream with bright pink dorsal blotch; surface smooth; 0.75 mm diam. x 0.5 mm high.

First instar larva. Body whitish, covered with short pale setae which are longer on final segment, prothoracic plate brown; head shiny black.; 1.5 mm long.

Final instar larva (Figs 2, 4). Body pale jade green, slightly darker dorsal line and spiracles, between each segment yellow-green, first and final segments pale blue-green; head pale straw-coloured with light fawn to darker brown variable banding on frons and lateral areas; length 15-25 mm.

Pupa (Figs 3, 5). Moderately short, pale brown to greenish brown, anterior and posterior darker brown; operculum rounded, sclerotized dark brown dorsal area covered in long setae; cremaster brown with flattened, slightly rounded to squared, crenulated posterior flange with two protruding lateral pointed processes; long cremaster hooks; length 13-15 mm.



Figs 1-8. Life history of *Ocybadistes knightorum*: (1) egg, lateral and dorsal view; (2) final instar larval head; (3) pupal frons; (4) final instar larva, lateral and dorsal view; (5) pupa, lateral and dorsal view (inset, dorsal view of cremaster); (6) first instar larval shelter and pupal shelter; (7) adult male, upperside and underside; (8) adult female, upperside and underside. Scale= 0.5 mm for Fig. 1; 1 mm for Fig. 2; 2 mm for Fig. 3; 6 mm for Fig. 4; 10 mm for Figs 5-8.

Discussion

Eggs were laid in April on the underside of the leaf blade near the tip, the first instar emerging after 12 to 14 days. The young larvae eat the egg shell before retreating to the base of the leaf and constructing a longitudinal tube shelter (Fig. 6), sealed with silk, in which they rest during the day. Later instars construct similar, larger tube shelters from two or three leaf blades of the food plant. Feeding occurs on leaves near the larval shelter at dusk and dawn. Larvae are extremely sluggish, almost imperceptible in movement when walking from leaf blade to leaf blade. Final instar larvae move to the base of the foodplant and construct oval puparia (Fig. 6) from leaf litter woven together with silk and open at one end. The pupal duration is 14-16 days.

Adults (Figs 7, 8) are active in sunny or warm overcast weather, males selecting short flight paths near the foodplant, resting on 1 m high undergrowth in well-lit glades. Females flit slowly through the shade, usually resting on the food plant. Both sexes feed occasionally on *Lantana* or low, flowering herbs. They are cryptic but locally common and rarely move far from the foodplant. The type locality is semi-shaded mixed *Casuarina* and *Melalueca* woodland surrounded by saline swamps and riverine sandy banks. Many grasses grow in the surrounding area and support other grass-feeding skippers (*Toxidia* Mabille, *Telicota* Moore, *Suniana* Evans, *Ocybadistes* Heron, *Taractrocera* Butler etc.), but *O. knightorum* appears more often confined to sandy shaded areas where dense hummocks of its foodplant grow. The grass forms more or less rounded, blue-green cushions, 1 m or more in diameter and 0.5 m or less high, spreading by means of runner roots.

Adults appear to fly throughout the warmer months (pers. observ. G. Miller, R. Mayo and A. Atkins). I have records of adults from April, October, November and December. This suggests that *O. knightorum* is multivoltine. However the winter brood is very slow to develop. Eggs laid in early April produced adults in mid-October to mid-November. Larvae grow more rapidly in spring and summer (pers. observ.). The larva of *O. knightorum* is remarkably sluggish and the pupa is quite short compared with other species of *Ocybadistes*.

Acknowledgments

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Reference

LAMBKIN, T.A. and DONALDSON, J.F. 1994. A new species of *Ocybadistes* Heron (Lepidoptera: Hesperiidae) from Australia. *Australian Entomologist* **21**: 15-20.